

SCOPE OF WORK

Solar Array Repairs and Upgrade for the Combined Maintenance Facility

At

**119 West Range Road Esler Field, Pineville,
Louisiana, 71360**



**STATE OF LOUISIANA
MILITARY DEPARTMENT
CONSTRUCTION AND FACILITIES MANAGEMENT OFFICE**

14 November 2019

Scope of work AS OF: 14 November 2019

Solar Array Repairs and Upgrade for the Combined Maintenance Facility

119 West Range Road, Esler Field,

Pineville, Louisiana, 71360

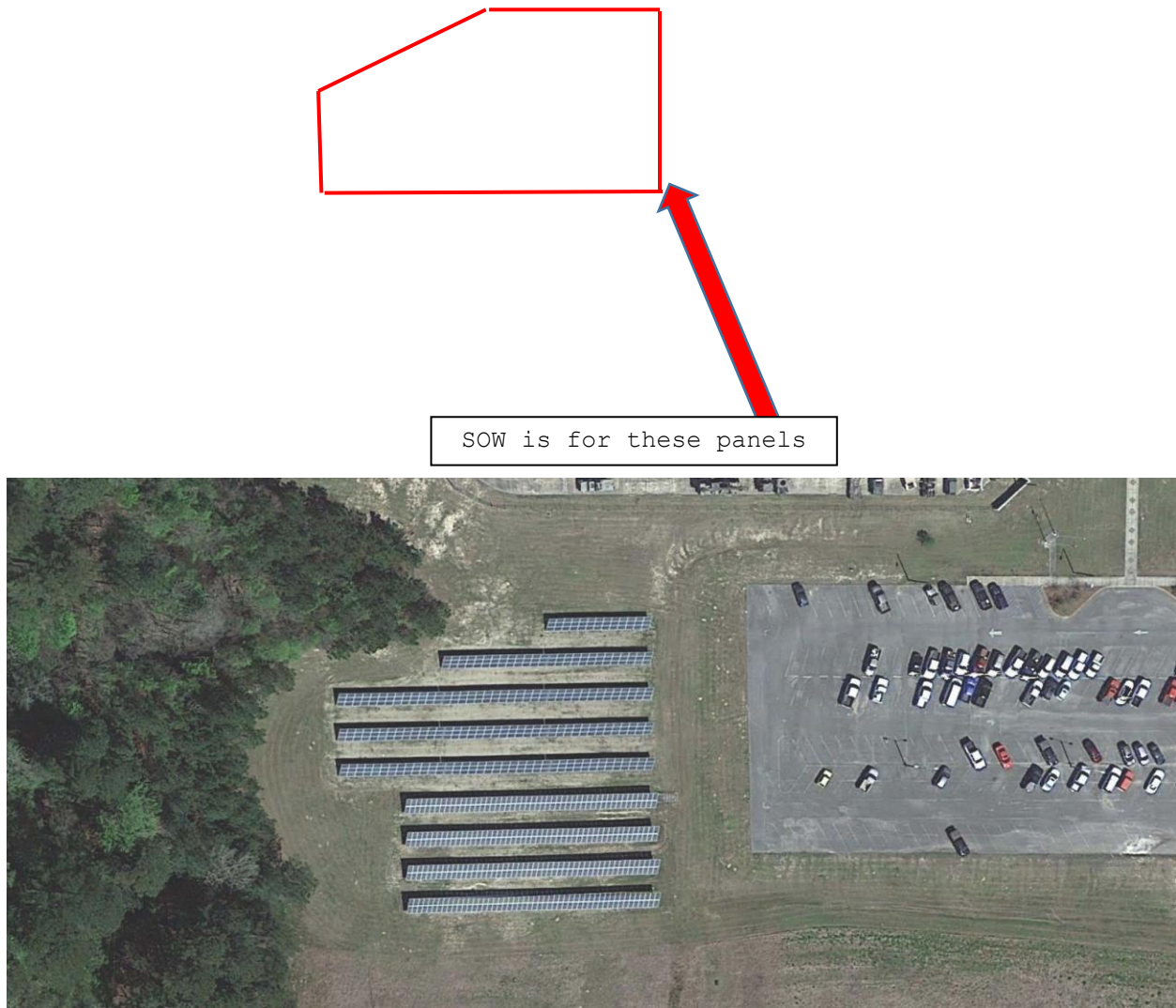
I. Summary of Work:

Contractor to provide all labor, commercial grade materials, tools and equipment necessary to make repairs/improvements as outlined below to the Solar Array at the Combined Maintenance Facility located at 119 West Range Road, Esler Field, Pineville, Louisiana, 71360.

II. Scope of Work: The scope of work, includes, but is not limited to the following:

A. General Requirements:

1. Provide a job-specific Health and Safety Plan and other general requirements.
2. Review Louisiana National Guard (LANG) Asbestos (ACM) and Lead (LBP) reports and surveys. In the event that any work will disturb ACM or LBP, immediately notify the project manager. Follow Louisiana National Guard (LANG) / OSHA guidelines if ACM / LBP materials will be disturbed.
3. Follow all Louisiana National Guard (LANG) lock-out tag-out procedures.
4. The Contractors are not to move equipment without the express consent of facility management.
5. Participate in the commissioning and verification process. Provide support for the Commissioning Agent (CA).
6. Repair or replace any Louisiana National Guard (LANG) property that is damaged as a result of this work.
7. All electrical work shall be in accordance with current National Electric Code (NEC).
8. Properly dispose of and recycle all materials generated during the implementation of this project.
9. Adhere to all documentation required in the provided project specifications which includes, but not limited to, safety documentation, daily and weekly reports, submittal for products and packing slips, request for information forms, etc.
10. Provide closeout project and technical documents.
11. Demonstrate operation and maintenance of the system to Louisiana National Guard (LANG) representatives and maintenance mechanics.



B. General Scope:

- 1) Any selected applicant will have their Enphase microinverter system installation experience verified by the Louisiana National Guard with the manufacturer (Enphase Energy).
- 2) Remove and properly dispose of forty eight (48) inoperable solar panels and provide and install new solar panels in their place.

Revised Attachment C – Specifications per Addendum No. 1 (5/14/2020)

- 3) Remove and properly dispose of all combiner boxes and provide and install new combiner boxes.
- 4) Provide and install new Enphase micro inverters.
- 5) Remove and properly dispose of all cabling on arrays and provide and replace with new cable.
- 6) Replace all broken connections on the back of existing panels.
- 7) Provide and install new cell modem, outside power vented electronic cabinet with five (5) year data agreement to have PV system monitorable.
- 8) Remove two (2) existing PV invertors, located at the facility, and provide junction box in same location to intercept feeders to Main Distribution Panel within facility. Existing inverters will be turned over to LANG.

Remove and dispose of Inverters



- 9) Provide NEMA 3R, 150 kVA Three (3) Phase 208 VAC to 480 VAC ground-mounted transformer.
- 10) Provide NEMA 3R, 350-amp Three (3) Phase panel board with main and minimum of seventy-two(72) circuits for termination of the combiner boxes.
- 11) Provide three (3) – 250 MCM line, one (1) – 250 MCM neutral, and one (1) - #4 ground (copper) from transformer to Main Distribution Panel located within the facility. A $\frac{3}{4}$ " (inch) ground rod with #4 bare copper will be required for the three (3) phase 3R panel board and transformer located at the array. 4/O wire currently ran to system will be turned over to LANG.

- 12) NEMA 3R Panel will be placed on a housekeeping pad. Housekeeping pad will be no less than 8' (feet) x 6' (feet) x 4" (inch) with steel reinforcement. Panel will be mounted in a way to sustain one hundred thirty (130) mph winds and securely fastened to the housekeeping pad.
- 13) NEMA 3R, 150 kVA transformer will be pad mounted adjacent to the 3R panel. Transformer will be securely fastened to housekeeping pad in a way to sustain one hundred thirty (130) mph winds.
- 14) All raceways between the transformer, the panel, the combiner boxes, and the solar array are to be 100% (percent) watertight.
- 15) Utilize the IQ7+ Micro-inverters for all panels.
 - All connectors will be replaced on the existing solar panels with Enphase MC4 connectors in order to match the IQ7+ Micro-inverters.
 - All fasteners and mounting hardware for the inverters will be stainless steel.
 - All stadium mounts will be grounded individually with ground rod, $\frac{3}{4}$ " (inch) rod with #4 bare copper.
 - All combiner boxes will be grounded individually with ground rod, $\frac{3}{4}$ " (inch) rod with #4 bare copper.
- 16) All metal shavings will be removed from junction boxes, combiner boxes, disconnects, transformer in order to mitigate rusting.
 - All penetrations will be watertight.
 - All prefabricated holes for mounting will be watertight.
- 17) Provide as-built, stamped drawings for solar array by approved Enphase vendor. They should contain approved layout and orientation of panels. This design should also ensure the design will function properly upon completion of project. The vendor will validate the total wattage of system and maximum restrictions of wiring for trunk line to facility.

Note: Upon final commissioning of the system via Enphase, the contractor will ensure the system is registered to LANG and provide username and password to LANG for use of Enphase monitoring program. Contractor is responsible for providing proper layout of the grid within the Enphase program and must demonstrate to LANG proper functionality of system. This will be done by identifying panels within the grid

III. Special Conditions:

1. The work will be completed within one hundred twenty (120) days.
2. Normal hours of operation for Unit Personnel is Tuesday – Friday 7:00 AM until 5:00 PM Central Standard Time except recognized State and Federal holidays. Work performed outside this schedule must be coordinated with the Readiness NCO or Unit personnel on site.
3. If an onsite storage area is required, the contractor must confirm a storage location for any materials, fixtures, equipment, trailers, etc., stored on site during the term length of the contract. The location will be approved by the Area Coordinator and the Project Manager during the pre-construction meeting.
4. The Contractor shall contact the Louisiana Army National Guard Project Manager prior to the beginning of work and for inspection of satisfactory completion.
5. The Contractor shall provide a work schedule (bar chart) forty eight (48) hours prior to start of work detailing each task of work. Provide material submittals for approval.
6. The awarded Contractor shall provide a detailed schedule of values for approval prior to beginning work and shall invoice for the completed work using the approved schedule of values. Invoices for payment of completed work shall be submitted using the "Application for Payment" (AIA) or similar detailed format form.
7. The Project Manager will schedule Monthly Progress Meetings to discuss and review payment applications, current completion status, inspections, potential delays, scheduling conflicts, material delays, etc.
8. All new materials and equipment require submittal to the Project Manager prior to ordering.
9. All specification sheets and submittals must be pre-approved by the Project Manager (PM) prior to ordering.
10. The Contractor shall coordinate all work with all trades to incorporate new and replaced equipment throughout the project.
11. The Contractor is responsible for all clean-up and debris removal daily. Work area will be kept clean at all times. The Contractor shall supply his own dumpster for scrap and trash removal.
12. The Contractor will supply all employees with Personal Protective Equipment (PPE) as required and/or necessary to perform the work and must comply with all

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Revised Attachment C – Specifications per Addendum No. 1 (5/14/2020)

applicable safety and environmental requirements. Work shall meet OSHA, NEC, Parish, City and State requirements and regulations as required.

13. The Contractor and Subcontractors will warranty their workmanship, repairs and installations for a period of one (1) year.

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